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CDC did not accept commercial support for this continuing education activity.
Assessing Vaccination Coverage Using an IIS

Beth Parilla | AIRA

National Immunization Conference | May 16, 2018
Purpose

• Provide practical considerations and decision points in designing population-based coverage assessments

• Encourage IIS programs to use their data
How to assess coverage

• Many ways to assess coverage - ideal method depends on
  • purpose,
  • quality of the data within the system, &
  • other factors

• Assessment = a rate describing the frequency at which immunization events occur in a defined population
  • Numerator
  • Denominator
  • Period of time
Key decision points
Definition & purpose of the assessment

• Purpose of assessment
  • Performance: is population vaccinated?
    • Implies that you are assessing the adherence of a provider, program, or region to administering all ACIP recommended doses
  • Protection: is population protected?
    • Determine the percentage of the population that is immune, or protected, from disease
      • Include population that is immune
Elements of Assessment

- Cohort determination
- Vaccination criteria
- Denominator source
Cohort
[who|where|when ]
Cohort

• Exclusion criteria:
  • inactive (e.g., deceased, moved)
  • outside geographic area of interest

• Age range
  • (e.g., 19-35 month olds, 13-17 year olds)

• Time period of assessment — used to calculate the age off the cohort
  • Point in time (e.g., 12/31/2014)
  • Period of time (e.g., 1/1/2014 – 12/31/2014) allowing and not allowing aging in/out
Vaccination Criteria
Criteria

- Age appropriate vaccines and # of doses
- Which products do you include?
  - Old CVX codes?
  - Inappropriate vaccines for age?
- Valid vs. valid + invalid immunizations
- Routine schedule or catch-up
  - Protection vs. performance
Criteria

19-35 month olds
4:3:1:3:3:1:4 Coverage
IISAR 2015, NYC-CIR

Valid: 59%
Valid + Invalid: 62%
Criteria

19-35 month olds
4:3:1:3:3:1:4 Coverage
12/31/2015, NYC - CIR

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<thead>
<tr>
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<tbody>
<tr>
<td>Coverage</td>
<td>59%</td>
<td>66%</td>
</tr>
<tr>
<td>Up to Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>40%</td>
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<tr>
<td></td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>60%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>80%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Criteria

• Compliance by
  • a certain date (as of 12/31/2014)
  • a certain age (e.g., by 24 months) – gives same opportunity to vaccinate to all members of your cohort

• Additional considerations
  • Immunity
  • Contraindications
  • Exemptions
Denominator
Denominators

- IIS-based
  - All children in IIS
  - Children in IIS with immunizations
  - Other adjustments to data

- Non-IIS based
  - Census
  - Schools
  - Birth records

- Other denominator options: testing new approaches
Census vs. IIS Denominators

19-35 month olds
4:3:1:3:3:1:4 Coverage
12/31/2015, NYC -CIR

- Census: 59%
- Patients with 2+ Immunizations: 58%
- All Active Patients: 51%
Other Considerations

- Data Quality
- Clinical Decision Support
- Fluidity of IIS data
- IIS maturity and completeness will determine what choices you make for elements of assessment
PRACTICAL EXAMPLES OF IIS POPULATION-BASED COVERAGE ASSESSMENTS

An Addendum to the Analytic Guide for Assessing Vaccination Coverage Using an IIS

March 2017
## In-Depth Examples of IIS Coverage Assessments

<table>
<thead>
<tr>
<th>Assessment Question</th>
<th>Purpose (and Vaccination Criteria)</th>
<th>Cohort: Assessment Age Range</th>
<th>Denominator Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New York City</strong></td>
<td>What are the quarterly vaccination coverage rates for the 4:3:1:3:1:4 vaccine series for children 19 through 35 months old in New York City? What are the vaccination coverage rates for 1 and 3 doses of HPV for adolescents 13 through 17 years old in New York City?</td>
<td>Protection from vaccine-preventable diseases among children 19 through 35 months and adolescents 13 through 17 years (Valid doses only; immunity included in numerator)</td>
<td>Method 1: Point in Time Assessment</td>
</tr>
</tbody>
</table>
For more information…

• Both documents are available in the AIRA Resource Repository
  • [http://repository.immregistries.org/](http://repository.immregistries.org/)
Thanks for your time!

Beth Parilla
AIRA Senior Program Manager
bparilla@immregistries.org
Geographic distribution of HPV Vaccination Coverage among Adolescents in North Dakota

NORTH DAKOTA IMMUNIZATION INFORMATION SYSTEM (NDIIS)
NIC, 2018
DOMINICK FITZSIMMONS, NDIIS COORDINATOR
Background
The NDIIS

- The North Dakota Immunization Information System (NDIIS) is a population-based system that attempts to collect demographic and vaccine dose information on all North Dakotans, active since 1996.

- Immunizations administered to anyone 19 years of age and younger are mandated for reporting to the NDIIS.
  - The majority of healthcare providers are reporting immunization data electronically.

- Adolescent participation is high, with 89% of adolescents ages 11-17 years olds having at least two immunization record in the NDIIS.

- The NDIIS is one of six Centers for Disease Control and Prevention (CDC) Sentinel Site awardees.

- North Dakota Century Code 23-01-05.3, Immunization Data
North Dakota is one of six CDC Sentinel Sites, selected to receive additional grant funding because the NDIIS has consistently met the following three criteria:
  - At least 85% of vaccine provider sites enrolled in the IIS
  - At least 85% of the children less than 19 years of age are participating in the IIS
  - At least 70% of the doses administered from the sentinel site area should be submitted to and processed by the IIS within 30 days of administration

As a Sentinel Site, the NDIIS is required to complete evaluation activities each year.
Purpose

- In 2017, the NDIIS completed an evaluation activity to assess the geographic distribution of Human Papillomavirus (HPV) vaccination rates among adolescents:
  - at the statewide level
  - in urban and rural areas
  - in oil-producing counties
  - and within American Indian (AI) reservation land boundaries

- A concurrent purpose of this study was to be able to compare NDIIS-based HPV coverage to published NIS-Teen coverage estimates.
  - HPV coverage was replicated using published NIS-Teen methodology.
Demographics-Urban vs. Rural

- Metropolitan and Micropolitan Statistical Areas are defined by the US Office of Management and Budget as:
  - "a core area containing a substantial population with adjacent communities having a high degree of economic and social integration with that core".
  - Metropolitan Statistical Areas (MtSAs) have at least one urbanized area with a population of at least 50,000 people. Micropolitan Statistical Areas (MiSAs) have at least 10,000 but < 50,000 population.

- Four ND counties are considered MtSAs
- Eight ND counties are considered MiSAs
  - 6 of which are oil-producing

- 73.1% of the state’s population lives in an MtSA/MiSA county in North Dakota.
  - 45.0% of the population live in the three counties containing MtSA central cities (Bismarck, Fargo, Grand Forks)
  - All MtSA central cities are located in the central-to eastern half of the state
NIS Teen vs NDIIS

- Due to the small sample size for North Dakota in the NIS-Teen, NIS disparities data is unavailable by race/ethnicity and incompletely available by geography.
  - In the 2015 NIS-Teen, a range of 33 to 159 individuals was sampled for HPV coverage estimations in North Dakota.
  - Coverage estimates based on very small numbers may not reflect the population coverage accurately.
  - Confidence intervals for this data tend to vary widely and are potentially unreliable.

- In contrast, HPV coverage rates calculated from NDIIS data are population-based
  - This can be considered a more robust source of data for immunization coverage analysis
NIS Teen- Indications of Disparity

- According to published NIS-Teen 2015 data estimates:
  - National coverage for HPV vaccine is higher among female adolescents living below the poverty level (44.4 ± 3.9 %), versus those living at or above the poverty level (41.3 ± 2.1 %).
    - In North Dakota, 11.2% of all persons are estimated to live in poverty.
  - Among AI individuals, the poverty rate is much higher
    - 37.5% are living below the poverty line in North Dakota.

- NIS-Teen data also indicated higher HPV vaccination coverage among females living in MtSA Central Cities versus those living in less urbanized areas.

- NIS-Teen data was not calculated for AI adolescents in North Dakota, and is not calculated for most states.

- However, national adolescent AI HPV coverage estimates tend to compare closely to overall rates.
  - National data from 2015 shows 38.7 ± 12.9 % coverage among female AI adolescents versus 39.6 ± 2.1% among female white adolescents.
North Dakota is a predominantly rural state, with an average pop density of 9.7 people per square mile.

Out of the state’s 53 counties, 17 are considered oil-producing by the Department of Mineral Resources.*

- Experiencing high rate of growth and movement of people, including adolescents and young adults in the last decade

US Census data indicates that much of the greatest population growth has occurred in oil producing counties (Figure 2, Table 1)

- Some counties experienced 30-100% increases in population from 2010-2015.

*https://www.dmr.nd.gov/oilgas/stats/statisticsvw.asp

![Fig 2: US Census county population growth, years 2012-2013](image)

<table>
<thead>
<tr>
<th>Oil Producing County</th>
<th>Population 2010 (Census)</th>
<th>Population Estimate as of July 1 2015</th>
<th>Projected Population Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>McKenzie</td>
<td>6360</td>
<td>12792</td>
<td>101.1</td>
</tr>
<tr>
<td>Williams</td>
<td>22398</td>
<td>35387</td>
<td>58</td>
</tr>
<tr>
<td>Mountrail</td>
<td>7673</td>
<td>10307</td>
<td>34.3</td>
</tr>
<tr>
<td>Stark</td>
<td>24199</td>
<td>32139</td>
<td>32.8</td>
</tr>
<tr>
<td>Dunn</td>
<td>3536</td>
<td>4574</td>
<td>29.4</td>
</tr>
</tbody>
</table>

*Table 1: Oil-producing county projected population changes, 2010 to 2015 (top five)*
Demographics-Migration

- North Dakota’s oil-producing counties have experienced significant migration in the last decade.
- The primary source of recent population change in these counties has been due to the changes in oilfield related employment (Figure 3).
- An east-west divide in the state is readily apparent in the population change map for 2012-2013*.

*http://storymaps.esri.com/stories/2014/census-county-population-change/
Demographics-American Indian

- North Dakota has four American Indian (AI) reservations within its borders, which are all located in rural counties.
- The state has one of the highest proportions of AI residents in the United States.
  - US Census estimate, 2016: 5.5%
- Within the NDIIS, 5.1% of all active records belong to AI individuals.
  - Studies have shown that HPV vaccine uptake among AI individuals is low in general.
  - AI women living in the norther plains are twice as likely as the national average to report HPV infection.*

*HPV Vaccine Uptake Low Among Native Americans, Fed Pract. 2016 April;33(4): e2
The North Dakota Department of Health has begun assessing immunization coverage rates at the county level for all routinely recommended vaccines among all age groups, including adolescents (Figure 4).

- An east-west geographic disparity in immunization coverage has become apparent.

- Western, predominantly oil-producing counties have lower immunization rates overall.

- Adolescent immunization series rates are lower in areas that overlap counties with higher population change and migration rates.

Fig 4: 1:1:2 Adolescent immunization series completion rates by county, 13-17 year olds, quarter 1 2018.

1:1:2 adolescent vaccine series includes >=1 dose of Td or Tdap vaccine, >=1 dose of meningococcal conjugate (MCV4) vaccine and up-to-date with either 2 or 3 doses of human papillomavirus (HPV) vaccine.
Current HPV Coverage Rates

- Mapping NDIIS data for up-to-date HPV coverage among all adolescents 13-17 years of age by county reveals geographical patterns of distribution (Figure 1):
  - Generally lower coverage rates in western counties
  - High coverage overlapping three AI reservations boundaries (Sioux, Rolette, Ramsey Counties)
  - Coverage in predominantly urbanized counties close to statewide rate of 51.2% for females and 45.4% for males
    - Average rate in MtSAs is 46.2%
    - Average rate in MiSAs is 43.5%
      - For males and females

*Fig 1: HPV Up-to_Date Coverage by County, Female and Male Adolescents, Quarter 1, 2018*
Methods
HPV Vaccine Coverage

- **Replication of NIS-Teen Methodology**
  - Comparing published NIS-Teen data from 2008 through 2015 to NDIIS Data, for male and female adolescents age 13-17 years.
  - NDIIS 3-dose HPV coverage data was calculated among matching birthdate cohorts for each year of NIS-Teen publication.
  - For active, non-moved or gone-elsewhere records.
  - For valid HPV doses (HPV-2 (Cervarix®), HPV-4 (Gardasil®), HPV-9 (Gardasil-9®), HPV (unspecified)).
  - Data was stratified using NDIIS client record demographic information.*
    - by county
    - by zip code

- **Assessing Urban and Rural Areas Coverage**
  - MtSA and MiSA overlapping county borders were also considered, to assess the urban versus rural divide.

- **Assessing AI Reservation Areas Coverage**
  - Zip code areas were used to approximate AI reservation boundaries.
    - Intersecting and overlapping zip codes were considered as reservation areas and included in coverage calculations.

*According to the NDDoH small numbers release policy, only areas analyzed with >5 adolescents in the population denominator were included.
Coverage Visualization

- Three-dose HPV coverage by gender was mapped by county and by zip code using Using ArcGIS Online®.
  - Additional layer data for AI reservation boundaries and MtSA/MiSA areas were added from online Esri® map layers.

- As some zip codes and counties overlap reservation areas, coverage rates for individuals living within AI reservation boundaries were manually estimated
  - based on the the overlying and intersecting zip code areas

- Urban areas were assessed as counties lying with MtSAs and MiSAs.
  - NIS-Teen does not specifically publish data on these areas, rather by MtSA central city (of which ND has three) and by Outside MtSA/MiSA (rural counties in ND).
Results
Comparing published NIS-Teen HPV coverage estimates on adolescents ages 13-17 years at the state level (Table 2):

- NDIIS coverage has been quite close to NIS-Teen estimates for most published years.

For most NIS-Teen published years, NDIIS HPV Coverage rates have fallen within NIS-Teen estimate confidence intervals.

<table>
<thead>
<tr>
<th>Year</th>
<th>NIS-Teen Female</th>
<th>NDIIS Female</th>
<th>% Difference Female</th>
<th>NIS-Teen Male</th>
<th>NDIIS Male</th>
<th>% Difference Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>47.1 (±9.1)</td>
<td>40.7**</td>
<td>6.4</td>
<td>38.4 (±8.6)</td>
<td>28.9</td>
<td>9.5</td>
</tr>
<tr>
<td>2014</td>
<td>41.7 (±9.4)</td>
<td>36.2**</td>
<td>5.5</td>
<td>25.3 (±7.8)</td>
<td>21.9**</td>
<td>3.4</td>
</tr>
<tr>
<td>2013</td>
<td>41.1 (±9.1)</td>
<td>31.7</td>
<td>9.4</td>
<td>18.4 (±7.5)</td>
<td>13.9**</td>
<td>4.5</td>
</tr>
<tr>
<td>2012</td>
<td>40.9 (±9.6)</td>
<td>27.1</td>
<td>13.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>27.8 (±10.3)</td>
<td>23.7**</td>
<td>4.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>26.3 (19.8-34.0)</td>
<td>20.3**</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>31.7 (23.6-41.1)</td>
<td>16.7</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>15.9 (10.8-22.8)</td>
<td>11.7**</td>
<td>4.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: NIS-Teen HPV vaccination coverage estimates compared to NDIIS HPV vaccination coverage rates by year and gender for adolescents ages 13-17 years
County Level Coverage

- NDIIS based HPV coverage rates in 2015 among female adolescents are higher overall compared to males (*Figure 6*).

- There is an indication of higher general coverage rates in eastern and central counties for females.
  
  - Western, south-western and southcentral counties show a tendency towards lower coverage rates.

- Standing Rock reservation is an island of high coverage on the southern-central border
  
  - Along with Ramsey and Rolette counties, which both contain reservation areas.

*Fig 6: 2015 Female (top) and male (bottom) HPV 3-dose coverage rates by county, 2015*
Urban vs Rural

- North Dakota’s MtSAs and MiSAs did not show significant variance from the statewide HPV coverage rates (*Figure 7*).
  - This includes MtSA counties that contain the MSA Central Cities (Burleigh, Cass, Grand Forks).
- MtSA/MiSA counties had similar rates to bordering and surrounding counties for both males and females.
  - No clear urban/rural disparity was evident at the county level.

*Fig 7: 2015 Female (top) and male (bottom) HPV three dose coverage rates by county and MSA, 2015*
Zip Code Level Coverage

- Zip code level analysis revealed areas within counties that have higher and lower coverage than the county-level data showed (Figure 8).

- AI reservation boundaries (black) surround some of the state’s zip code areas with the highest coverage rates.
  - Standing Rock, Spirit Lake and Turtle Mountain reservation boundaries show HPV coverage rates for females 19.7-22.2% higher than the statewide rate, and for males, rates are 20.8-24.5% higher than the statewide rate.

Fig 8: 2015 Female (top) and male (bottom) HPV three dose coverage rates by county, MSA and AI reservation lands, 2015
Geographic Comparison

- Comparing statewide rates, all county averages, MtSA, MiSA and non-MSA areas (*Table 3*):
  - shows no major variance in these categories.

- Comparing the AI reservation areas analyzed in this study with all other areas:
  - significantly higher HPV coverage on 3 of the 4 AI reservations was found.

<table>
<thead>
<tr>
<th>Geographic Location</th>
<th>Female Adolescent 3-dose Coverage (%)</th>
<th>Male Adolescent 3-Dose Coverage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Dakota (statewide rate)</td>
<td>40.7</td>
<td>28.9</td>
</tr>
<tr>
<td>All Counties Average</td>
<td>42.8</td>
<td>32.0</td>
</tr>
<tr>
<td>Fort Berthold*</td>
<td>44.3</td>
<td>35.3</td>
</tr>
<tr>
<td>Standing Rock*</td>
<td>62.9</td>
<td>50.0</td>
</tr>
<tr>
<td>Spirit Lake*</td>
<td>60.4</td>
<td>49.7</td>
</tr>
<tr>
<td>Turtle Mountain*</td>
<td>62.9</td>
<td>53.4</td>
</tr>
<tr>
<td>MtSA</td>
<td>41.3</td>
<td>27.3</td>
</tr>
<tr>
<td>MiSA</td>
<td>41.2</td>
<td>27.3</td>
</tr>
<tr>
<td>Non-MSA</td>
<td>43.3</td>
<td>33.4</td>
</tr>
</tbody>
</table>

*Table 3: Average 3-dose HPV series completion calculated from NDIIS data for statewide, AI reservation area, MSA and non MSA counties for 2015.*
Geographic Comparison-2015 vs 2014

- Comparing 2015 to 2014 data (Table 4):
  - Upward trend in immunization coverage across almost all areas analyzed among males and females (highlighted yellow).
  - AI reservations still stood out as islands of particularly high coverage (highlighted blue).
  - No major deviation from the statewide rate was noted for urban versus rural areas.

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</thead>
<tbody>
<tr>
<td>North Dakota</td>
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<td>9.0</td>
</tr>
<tr>
<td>Fort Berthold¶</td>
<td>44.3</td>
<td>32.3</td>
<td>12.0</td>
<td>35.3</td>
<td>26.7</td>
<td>8.6</td>
</tr>
<tr>
<td>Standing Rock¶</td>
<td>52.9</td>
<td>62</td>
<td>0.9</td>
<td>56</td>
<td>45.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Spirit Lake¶</td>
<td>60.4</td>
<td>56</td>
<td>4.4</td>
<td>49.7</td>
<td>39.3</td>
<td>14.4</td>
</tr>
<tr>
<td>Turtle Mountain¶</td>
<td>62.8</td>
<td>65.4</td>
<td>2.5</td>
<td>53.4</td>
<td>42.5</td>
<td>10.9</td>
</tr>
<tr>
<td>MSA</td>
<td>41.3</td>
<td>37.6</td>
<td>3.7</td>
<td>27.3</td>
<td>20.4</td>
<td>6.9</td>
</tr>
<tr>
<td>MSA</td>
<td>41.2</td>
<td>34.9</td>
<td>6.3</td>
<td>27.3</td>
<td>21.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Non-MSA</td>
<td>43.3</td>
<td>38.3</td>
<td>5.0</td>
<td>33.4</td>
<td>23.5</td>
<td>9.9</td>
</tr>
</tbody>
</table>

Table 4: Comparison of three-dose HPV series completion rates according to NDIIS and percentage change by gender by year, 2014 2015, for statewide, reservation area, MSA and non-MSA counties.
Discussion

- As county-level data is not published by the NIS-Teen, the results of this evaluation were very informative of the HPV vaccine coverage landscape in North Dakota.
  - Comparing NIS-Teen estimates to NDIIS rates shows significant similarity and agreement between the published statewide and urban estimations.

- The east-west divide in coverage is evident at each level analyzed in this study for HPV coverage among adolescents.
  - Data for males and females in 2015 showed single digit rates in some counties and yet close to 80% coverage in others.
  - In contrast to Sioux County, a neighboring county to the east, Emmons County, showed a coverage rate 53.3% lower for female adolescents, and 50.1% lower for males.
  - This disparity has been noted for other vaccines, and other age groups in North Dakota.
Discussion

- Out of the state’s four AI reservation areas, three were found to have exceptionally high HPV coverage rates.
  - Rates ranged from 19-30% higher when compared to all other large geographic areas analyzed in this study.
  - Similarly, both male and female adolescent HPV coverage rates on these three reservations are higher as compared to the statewide rates.

- The use of zip code data overall shows a more nuanced picture of potential areas of need, which can be useful in more focused identification of populations or areas of lower access to healthcare resources in the state.
Limitations

- Address information is not captured historically within the NDIIS, and is dependent on provider data entry.
  - This study looked at HPV vaccine doses administered in past years but address information extracted for the mapping analysis is based on current address data, which may differ from where the individuals lived at the time they received their vaccinations.

- Another limitation of coverage based on the geographical areas of AI reservations is that some reservations are covered within a single zip code area, while others contain a significant number of zip codes that overlap with areas outside reservation boundaries.
  - Coverage rates can more certainly be said to reflect the immunization rate within the boundaries of the AI reservations that are located within a single zip code versus multiple zip codes.
Conclusion

- Overall, this study showed that the NDIIS is a useful tool to:
  - compare NIS-Teen based HPV coverage estimates to NDIIS-derived data
  - produce coverage information among populations not assessed by NIS-Teen
  - identify variable distribution of HPV immunization coverage within North Dakota’s adolescent population
  - highlight potential areas of demographic and geographic immunization disparity

- Future work may include efforts to further analyze and assess the disparities and differences in immunization coverage found by this study.
Acknowledgements

Thank you to:
Mary Woinarowicz, MA, NDIIS Manager
Molly Howell, MPH, Immunization Program Manager
Contact

Dominick Fitzsimmons
NDIIS Coordinator
North Dakota Department of Health
(701) 328 4169
dfitzsimmons@nd.gov
Immunization Information Systems and Special Assessments

Maureen Leeds, MPH | Epidemiologist

May 16, 2018
• Introduction to the Minnesota Immunization Information Connection (MIIC)
• Special assessments using MIIC data
• Considerations for other jurisdictions
Introduction to MIIC
Minnesota Immunization Information Connection (MIIC)

• Minnesota’s statewide immunization information system (IIS)
• Created in 2002
• Stores consolidated immunization records
• Provides tools for immunization practice, monitoring, and improvement
• Implied consent (opt-out) system
Special Assessments Using MIIC Data
Our Model

1. Baseline Knowledge/Data
2. Special Assessment
3. Intervention Planning
4. Implementation
5. Evaluation

Questions:
- Did our intervention work?
- How can we effectively implement our intervention?
- How can we use the results to improve public health?
- How can we use data from our IIS and other sources to learn more?
Vaccination Coverage by Maternal Country of Origin

Lower vaccination coverage among Somali-Minnesotans – are there other pockets of need?

Used data from MIIC and Office of Vital Records to identify groups facing vaccination disparities.

Community outreach? Further analysis?

Lower vaccination coverage among Somali-Minnesotans – are there other pockets of need?
Vaccination Coverage Among Pregnant Women

Influenza and Tdap vaccination is important for pregnant women and their babies. Rates appear low nationally.

Baseline Knowledge/Data

Special Assessment

Intervention Planning

Implementation

Evaluation

MOC4 begins summer 2018.

Designed MOC4 for OB-GYNs.

Used data from MIIC and Minnesota Office of Vital Records to assess influenza and Tdap vaccination coverage.

Influenza and Tdap vaccination is important for pregnant women and their babies. Rates appear low nationally.
High family poverty rates correlate with poor preventative health care and health outcomes.

- Used data from MIIC and U.S. census to identify ZIP codes with high poverty and low immunization rates.
- Sent recall letters to parents of under/unvaccinated children in target ZIP codes.
- Planned reminder/recall intervention.
- High family poverty rates correlate with poor preventative health care and health outcomes.

- Tracked changes in rates for intervention and control groups.
Considerations for Other Jurisdictions
• What populations in your jurisdiction might be facing low vaccination coverage and/or vaccination coverage disparities?

• What data are available – internally and externally – that could help you run a special assessment to learn more?

• How could you use the results of your special assessment?
Considerations

• Purpose of special assessment
• IIS data quality and outside source data quality
• Data privacy and data use agreements
• Relationships with partners